# MUSCLE & NERVE

Official Journal of the American Association of Electrodiagnostic Medicine


## CONTENTS

JANUARY 1999


1 **Message from the Editor**

2 **Acknowledgments**

**EDITORIAL**

4 **The Compound Muscle Action Potential and Its Shape**
*John C. Kincaid, MD*

**MAIN ARTICLES**

6 **The Contribution of the Interosseous Muscles to the Hypothenar Compound Muscle Action Potential**
*Kevin C. McGill, PhD, and Zoia C. Lateva, PhD*

16 **Dystrophin Isoforms Dp71 and Dp427 Have Distinct Roles in Myogenic Cells**
*Perry L. Howard, BSc, Ghassan Y. Dally, MSc, Stephanie D. Ditta, MSc, Richard C. Austin, PhD, Ronald G. Worton, PhD, Henry J. Klamut, PhD, and Peter N. Ray, PhD*

28 **Localized Hypertrophic Neuropathy: Magnetic Resonance Imaging Findings and Long-Term Follow-Up**
*Zachary Simmons, MD, Ziad I. Mahadeen, MD, Milind J. Kothari, DO, Stephen Powers, MD, Scott Wise, MD, and Javad Towfighi, MD*

37 **Heat Sensitivity of Sensory Fibers in Carpal Tunnel Syndrome**
*Annabel K. Wang, MD, Elizabeth M. Raynor, MD, Andrew S. Blum, MD, PhD, and Seward B. Rutkove, MD*

43 **Isolation of Two Populations of Myoblasts from Porcine Skeletal Muscle**
*John R. Blanton, Jr., MS, Alan L. Grant, PhD, Douglas C. McFarland, PhD, J. Paul Robinson, PhD, and Christopher A. Bidwell, PhD*

51 **Temperature Dependence of Excitability Indices of Human Cutaneous Afferents**
*David Burke, MD, DSc, Ilona Mogyoros, MD, PhD, Rebecca Vagg, BSc, and Matthew C. Kiernan, PhD, FRACP*

61 **Tau Expression in Denervated Rat Muscles**
*Shin-Ichiro Nagao, MD, Toshihide Kumamoto, MD, Tomoko Masuda, MD, Hidetsugu Ueyama, MD, Itaru Toyoshima, MD, and Tomiyasu Tsuda, MD*

71 **An Electrophysiological Exploration of the Double Crush Hypothesis**
*James K. Richardson, MD, Glenn M. Forman, MD, and Barth Riley, PhD*

78 **Anterograde Transport of Leukemia Inhibitory Factor within Transected Sciatic Nerves**
*Timothy M. Bennett, MB, BS, FRACS, Bruce J. Dowsing, PhD, Lawrence Austin, PhD, Aurora Messina, PhD, Nic A. Nicola, PhD, and Wayne A. Morrison, MD, BS, FRACS*

88 **Sensitive Median–Ulnar Motor Comparative Techniques in Carpal Tunnel Syndrome**
*Howard W. Sander, MD, Christine Quinto, MD, Peter B. Saadeh, MD, and Sudhansu Chokroverty, MD*

99 **Ultrastructural Protein Zero Expression in Charcot–Marie–Tooth Type 1B Disease**
*Philippe Sindou, PhD, Jean-Michel Vallat, MD, Françoise Chapon, MD, Juan-José Archelos, MD, François Tabaraud, MD, Thierry Anani, MD, Kyle G. Braund, PhD, Thierry Maisonobe, MD, Jean-Jacques Hauw, MD, PhD, and Antoon Vandenberghe, PhD*

**SHORT REPORTS**

105 **Labial Salivary Gland Biopsy for Diagnosis of Amyloid Polyneuropathy**
*Emmanuèle Lechapt-Zalcman, MD, François-Jérôme Authier, MD, PhD, Alain Creange, MD, Marie-Catherine Voisin, MD, and Romain K. Gherardi, MD*

108 **Immune-Mediated Peripheral Neuropathies and Voltage-Gated Sodiums Channels**
*Michael Benatar, PhD, Hugh J. Willison, MRCP, and Angela Vincent, FRCPath*

111 **Single-Fiber Electromyography of the Laryngeal Muscles**
*Valerie Schweizer, MD, Gayle E. Woodson, MD, FACS, and Tulio E. Bertorini, MD*

115 **The Dropped Head Plus Syndrome: Quantitation of Response to Corticosteroids**
*Michael R. Rose, MD, Kerry H. Levin, MD, and Robert C. Griggs, MD*

119 **P/Q-Type Voltage-Gated Calcium Channel Antibodies in Paraneoplastic Disorders of the Central Nervous System**
*Raymond Voltz, MD, Antoine F. Carpentier, MD, Myrna R. Rosenfeld, MD, PhD, Jerome B. Posner, MD, and Josep Dalmau, MD, PhD*

123 **Electrical Myotonia in Heterozygous Carriers of Recessive Myotonia Congenita**
*Feza Deymeer, MD, MS, Frank Lehmann-Horn, MD, Piraye Serdaroğlu, MD, Sevinç Çakirkaya, MD, Sandra Benz, MD, Reinhardt Rüdel, PhD, and Coşkun Özdemir, MD*

**ISSUES & OPINIONS**

126 **Thoracic Outlet Syndrome**
*David B. Roos, MD, FACS, and Asa J. Wilbourn, MD*

**REGULAR FEATURES**

139 **Letters to the Editor**

145 **Calendar of Events**

146 **AAEM News and Comments**

**FEBRUARY 1999**

**EDITORIAL**

149 **Electromyography, Magnetic Resonance Imaging, and Radiculopathy: It's Time to Focus on Specificity**
*Lawrence R. Robinson, MD*

**MAIN ARTICLES**

151 **Electromyography and Magnetic Resonance Imaging in the Evaluation of Radiculopathy**
*Rachel A. Nardin, MD, Mahesh R. Patel, MD, Thomas F. Gudas, MD, Seward B. Rutkove, MD, and Elizabeth M. Raynor, MD*

156 **Necrotizing Myopathy Induced by Overexpression of Interferon-γ in Transgenic Mice**
*G. Diane Shelton, DVM, PhD, Nigel A. Calcutt, PhD, Robert S. Garrett, MS, Danling Gu, PhD, Nora Sarvetnick, PhD, W. Marie Campana, PhD, and Henry C. Powell, MD, DSc*

166 **The Influence of Temperature on Conduction Block**
*Hessel Franssen, MD, George H. Wieneke, PhD, and John H.J. Wokke, MD*

174 **Muscle Precursor Cells Injected into Irradiated mdx Mouse Muscle Persist After Serial Injury**
*Jacqueline G. Gross and Jennifer E. Morgan, PhD*

186 **The Effects of Training Through High-Frequency Electrical Stimulation on the Physiological Properties of Single Human Thenar Motor Units**
*K. Ming Chan, MD, FRCP(C), Leonard P. Andres, MSc, Yelena Polykovskaya, MD, and William F. Brown, MD, FRCP(C)*

196 **Differential Expression of C-Protein Isoforms in Developing and Degenerating Mouse Striated Muscles**
*Mariko Kurasawa, MSc, Naruki Sato, PhD, Ayako Matsuda, MSc, Sumito Koshida, MSc, Tsuyoshi Totsuka, DSc, and Takashi Obinata, DSc*

208 **Effects of Training on Exercise-Induced Muscle Damage and Interleukin 6 Production**
*J.-L. Croisier, PhD, G. Camus, PhD, I. Venneman, MD, PhD, G. Deby-Dupont, PhD, A. Juchmès-Ferir, MD, M. Lamy, MD, PhD, J.-M. Crielaard, MD, PhD, C. Deby, MD, PhD, and J. Duchateau, MD, PhD*

213 **Preventive Effects of Insulinlike Growth Factor-I on Steroid-Induced Muscle Atrophy**
*Fumio Kanda, MD, Keiko Takatani, MD, Shiho Okuda, MD, Tatsuo Matsushita, MD, and Kazuo Chihara, MD*

218 **Detecting Single Fiber Contributions to Motor Unit Action Potentials**
*Daniel William Stashuk, PhD*

230 **Differential Response of Fast Hindlimb Extensor and Flexor Muscles to Exercise in Adult Spinalized Cats**
*Roland R. Roy, PhD, Robert J. Talmadge, PhD, John A. Hodgson, PhD, Yasuharu Oishi, PhD, Kenneth M. Baldwin, PhD, and V. Reggie Edgerton, PhD*

242 **Positive Sharp Wave and Fibrillation Potential Modeling**
*Daniel Dumitru, MD, John C. King, MD, William E. Rogers, MS, and Dick F. Stegeman, PhD*

**SHORT REPORTS**

252 **Neuropathy in Two Cobalamin-Deficient Breast-Fed Infants of Vegetarian Mothers**
*Francis Renault, MD, Patrick Verstichel, MD, Jean-Pierre Ploussard, MD, and Jean Costil, MD*

255 **Absence of Transcallosal Inhibition in Adolescents with Diplegic Cerebral Palsy**
*Florian Heinen, MD, Janbernd Kirschner, MD, Urban Fietzek, Franz-Xaver Glocker, MD, Volker Mall, MD, and Rudolf Korinthenberg, MD*

258 **Acute Exercise Causes Mitochondrial DNA Deletion in Rat Skeletal Muscle**
*Yasutomo Sakai, MSc, Yukio Iwamura, PhD, Jun-Ichi Hayashi, PhD, Nao Yamamoto, Norio Ohkoshi, MD, and Hiroshi Nagata, MD*

262 **Steroid-Responsive Multifocal Demyelinating Neuropathy with Central Involvement**
*Rocco Liguori, MD, Romana Rizzi, MD, Roberto Vetrugno, MD, Fabrizio Salvi, MD, Alessandra Lugaresi, MD, Sabina Cevoli, MD, and Pasquale Montagna, MD*

266 **Chronic Motor Axonal Neuropathy: Pathological Evidence of Inflammatory Polyradiculoneuropathy**
*Kenneth C. Gorson, MD, Allan H. Ropper, MD, Lester S. Adelman, MD, Elizabeth M. Raynor, MD, and Clifford B. Saper, MD, PhD*

**AAEM CASE REPORT**

271 **Guillain-Barré Syndrome**
*David H. Weinberg, MD*

**ISSUES & OPINIONS**

282 **The Role of Needle Electromyography in the Evaluation of Patients with Carpal Tunnel Syndrome**
*Steve M. Gnatz, MD and Robert R. Conway, MD*

**REGULAR FEATURES**

287 **Letters to the Editor**

293 **Book Reviews**

295 **Calendar of Events**

296 **AAEM News and Comments**

**MARCH 1999**

**EDITORIAL**

297 **Corticomotoneuronal PSTH Studies**
*K.R. Mills, PhD, FRCP*

**MAIN ARTICLES**

299 **Assessment of Upper and Lower Motor Neurons in Kennedy's Disease: Implications for Corticomotoneuronal PSTH Studies**
*Markus Weber, MD, and Andrew Eisen, MD*

307 **Inactivity-Induced Remodeling of Neuromuscular Junctions in Rat Diaphragmatic Muscle**
*Y.S. Prakash, PhD, Hirofumi Miyata, PhD, Wen-Zhi Zhan, MD, and Gary C. Sieck, PhD*

320 **The Mixed Nerve Silent Period Is Prolonged during a Submaximal Contraction Sustained to Failure**
*David M. Cox, MSc, and E. Cafarelli, PhD*

329 **Physiological and Immunohistochemical Characterization of Cisplatin-Induced Neuropathy in Mice**
*Enrique Verdú, PhD, Jorge J. Vilches, PhD, Francisco J. Rodríguez, PhD, Dolores Ceballos, PhD, Antoni Valero, MD, and Xavier Navarro, MD, PhD*

341 **Observations on the Variability of the H Reflex in Human Soleus**
*Kozo Funase, PhD, and Timothy S. Miles, PhD, DSc*

347 **Association of IGF-I and IGF-II with Myofiber Regeneration In Vivo**
*Heidi L. Keller, MS, Barbara St. Pierre Schneider, DSc, Lois A. Eppihimer, MS, and Joseph G. Cannon, PhD*

355 **Electrophysiologic Findings in Amyloid Myopathy**
*Devon I. Rubin, MD, and Robert C. Hermann, MD*

360 **A Skin Blister Method to Study Epidermal Nerves in Peripheral Nerve Disease**
*William R. Kennedy, MD, Maria Nolano, MD, Gwen Wendelschafer-Crabb, MS, Timothy L. Johnson, MS, and Eiji Tamura, MD*

372 **Motor Nerve Conduction Velocity in Very Preterm Infants**
*Bert J. Smit, MD, Joke H. Kok, MD, PhD, Linda S. De Vries, MD, PhD, Friedo W. Dekker, MD, PhD, and Bram W. Ongerboer de Visser, MD, PhD*

378 **CMAP Amplitude Cartography of Muscles Innervated by the Median, Ulnar, Peroneal, and Tibial Nerves**
*J. Gert Van Dijk, MD, PhD, Inesz Van Benten, Cor G.S. Kramer, and Dick F. Stegeman, PhD*

**SHORT REPORTS**

390 **Induction of Heat-Shock Protein 72 in Rat Skeletal Muscle Does Not Increase Tolerance to Ischemia-Reperfusion Injury**
*Sean Lille, MD, Ching-Yuan Su, PhD, Thomas Schoeller, MD, Hans Suchy, MA, Sharon Lyons, BA, Robert C. Russell, MD, Michael Neumeister, MD, and Chen-Ching Lai, PhD*

394 **Multiple A Waves in Guillain-Barré Syndrome**
*Malte E. Kornhuber, MD, Christian Bischoff, MD, Heike Mentrup, MD, and Bastian Conrad, MD*

400 **Standardization of Anal Sphincter EMG: Technique of Needle Examination**
*Simon Podnar, MD, MSc, Zoran Rodi, MD, MSc, Adolf Lukanovič, MD, MSc, Bojan Tršinar, MD, DSc, and David B. Vodušek, MD, DSc*

404 **Multisystem Neuronal Involvement and Sicca Complex: Broadening the Spectrum of Complications**
*J.S. Katz, MD, D. Houroupian, MD, and M.A. Ross, MD*

**SPECIAL ARTICLE**

408 **Practice Parameter for Electrodiagnostic Studies in Ulnar Neuropathy at the Elbow: Summary Statement**
*American Association of Electrodiagnostic Medicine, American Academy of Neurology, and American Academy of Physical Medicine and Rehabilitation*

**AAEM CASE REPORT**

412 **Costoclavicular Mass Syndrome**
*John D. England, MD, and Robert L. Tiel, MD*

**ISSUES & OPINIONS**

419 **Critical Illness Polyneuropathy**
*Charles F. Bolton, MD, FRCP(C), and Anthony C. Breuer, MD*

**REGULAR FEATURES**

425 **Letters to the Editor**

432 **Calendar of Events**

433 **AAEM News and Comments**

APRIL 1999


**EDITORIAL**

435 **The Variations of Neuralgic Amyotrophy**
*John D. England, MD*

**MAIN ARTICLES**

437 **Neuralgic Amyotrophy with Phrenic Nerve Involvement**
*Heinz Lahrmann, MD, MSc, Wolfgang Grisold, MD, F. Jérôme Authier, MD, and Udo A. Zifko, MD*

443 **Blink Reflex Induced by Controlled, Ballistic Mechanical Impacts**
*Reinhard D. Beise, MD, Lothar U.E. Kohllöffel, PhD, and D. Claus, MD*

449 **Increase in the Degree of Coexpression of Myosin Heavy Chain Isoforms in Skeletal Muscle Fibers of the Very Old**
*Jesper L. Andersen, PhD, Gerasimos Terzis, MSc, and Ann Kryger, MD*

455 **A New Technique for Recording Sensory Conduction Velocity of the Inferior Alveolar Nerve**
*Satu K. Jääskeläinen, MD, DMSc*

460 **Elucidation of Muscle-Binding Peptides by Phage Display Screening**
*Tatiana I. Samoylova, PhD, and Bruce F. Smith, VMD, PhD*

467 **The Cutaneous Silent Period Is Mediated by Spinal Inhibitory Reflex**
*Eric L. Logigian, MD, George M. Plotkin, MD, PhD, and Jeremy M. Shefner, MD, PhD*

473 **Heart Involvement in Muscular Dystrophies Due to Sarcoglycan Gene Mutations**
*P. Melacini, MD, M. Fanin, MS, D.J. Duggan, PhD, M.P. Freda, MS, A. Berardinelli, MD, G.A. Danieli, MS, A. Barchitta, MD, E.P. Hoffman, PhD, S. Dalla Volta, MD, and C. Angelini, MD*

480 **Quantitative Electrophysiologic Studies in Sporadic Inclusion Body Myositis**
*Paul E. Barkhaus, MD, M. Isabel Periquet, MD, and Sanjeev D. Nandedkar, PhD*

488 **M-Wave Changes After High- and Low-Frequency Electrically Induced Fatigue in Different Muscles**
*Monique Badier, MD, PhD, Chantal Guillot, PhD, Cédric Danger, MSc, Ferdinand Tagliarini, MSc, and Yves Jammes, MD, DSc*

497 **Relationships Between Clinical Symptom Severity Scales and Nerve Conduction Measures in Carpal Tunnel Syndrome**
*Heecheon You, MS, Zachary Simmons, MD, Andris Freivalds, PhD, Milind J. Kothari, DO, and Sanjiv H. Naidu, MD*

502 **Changes in Expression of Voltage-Gated Potassium Channels in Dorsal Root Ganglion Neurons Following Axotomy**
*Kuniko Ishikawa, MD, PhD, Masaki Tanaka, MD, PhD, Joel A. Black, PhD, and Stephen G. Waxman, MD, PhD*

508 **Assessment of Trigeminal Small-Fiber Function: Brain and Reflex Responses Evoked by $CO_2$-Laser Stimulation**
*G. Cruccu, MD, A. Romaniello, A. Amantini, MD, M. Lombardi, P. Innocenti, MD, and M. Manfredi, MD*

**SHORT REPORTS**

517 **Dystrophin and Utrophin Do Not Play Crucial Roles in Nonmuscle Tissues in Mice**
*Jill A. Rafael, PhD, Jeffrey I. Trickett, MSc, Allyson C. Potter, and Kay E. Davies, DPhil*

520 **Reduction of Motor Artifact in Antidromic Ulnar Sensory Studies**
*Seward B. Rutkove, MD*

**AAEM PRACTICE TOPIC**

523 **Technology Review: The Neurometer® Current Perception Threshold (CPT)**
*AAEM Equipment and Computer Committee*

**CASE OF THE MONTH**

532 **Conduction Block and Continuous Motor Unit Activity in Chronic Acquired Demyelinating Polyneuropathy**
*Matthew N. Meriggioli, MD, and Donald B. Sanders, MD*

**REGULAR FEATURES**

538 **Letters to the Editor**

549 **Book Reviews**

552 Calendar of Events
553 AAEM News and Comments

MAY 1999

**EDITORIAL**

557 **Are Multifocal Motor Neuropathy and Lewis–Sumner Syndrome Distinct Nosologic Entities?**
*Gareth J. Parry, MD, FRACP*

**MAIN ARTICLES**

560 **Multifocal Acquired Demyelinating Sensory and Motor Neuropathy: The Lewis–Sumner Syndrome**
*David S. Saperstein, MD, Anthony A. Amato, MD, Gil I. Wolfe, MD, Jonathan S. Katz, MD, Sharon P. Nations, MD, Carlayne E. Jackson, MD, Wilson W. Bryan, MD, Dennis K. Burns, MD, and Richard J. Barohn, MD*

567 **Order Effects in Response Times of Parkinsonian Patients and Normal Controls**
*Douglas S. Goodin, MD, Michael J. Aminoff, MD, FRCP, Yasar Kutukcu, MD, and William J. Marks, Jr. MD*

573 **The Median Nerve Terminal Latency Index in Carpal Tunnel Syndrome: A Clinical Case Selection Study**
*Drasko Simovic, MD, and David H. Weinberg, MD*

578 **Comparison of the Muscle Fiber Diameter and Satellite Cell Frequency in Human Muscle Biopsies**
*Frank Maier, BA, and Antje Bornemann, MD*

584 **The Diagnostic Power of Motor Unit Potential Analysis: An Objective Bayesian Approach**
*G. Pfeiffer, MD*

592 **Effective Adenovirus-Mediated Gene Expression in Adult Murine Skeletal Muscle**
*Akiko Ishii, MD, PhD, Yasuko Hagiwara, PhD, Yoko Saito, MD, PhD, Kanji Yamamoto, MD, PhD, Katsutoshi Yuasa, PhD, Yumi Sato, PhD, Kiichi Arahata, MD, PhD, Shin'ichi Shoji, MD, PhD, Ikuya Nonaka, MD, PhD, Izumu Saito, MD, PhD, Yo-ichi Nabeshima, MD, PhD, and Shin'ichi Takeda, MD, PhD*

600 **Denervation and Reinnervation in Congenital Brachial Palsy**
*Heidi Scarfone, RT, Alan J. McComas, MB, Karen Pape, MD, and Rebecca Newberry, BSc*

608 **Polyradiculopathy in Sarcoidosis**
*Boyd Koffman, MD, PhD, Larry Junck, MD, Stanton B. Elias, MD, Howard W. Feit, MD, PhD, and Steven R. Levine, MD*

614 **Reflex Excitability of Facial Motoneurons at Onset of Muscle Reinnervation after Facial Nerve Palsy**
*Giovanni Cossu, MD, Josep Valls-Solé, MD, Francesc Valldeoriola, MD, Esteban Muñoz, MD, Pedro Benítez, MD, and Francina Aguilar, MD*

621 **In Vivo Determination of Altered Hemoglobin Saturation in Dogs with M-Type Phosphofructokinase Deficiency**
*Kevin McCully, PhD, Britton Chance, PhD, and Urs Giger, PD, Dr med vet, MS*

628 **Motor and Somatosensory Evoked Potentials in Asymptomatic Spondylotic Cord Compression**
*D.L.J. Tavy, MD, H. Franssen, MD, R.W.M. Keunen, MD, A.R. Wattendorff, MD, R.E.M. Hekster, MD, and A.C. Van Huffelen, MD*

**SHORT REPORT**

635 **Assessing Muscle Stiffness from Quiet Stance in Parkinson's Disease**
*Michael Lauk, MSc, Carson C. Chow, PhD, Lewis A. Lipsitz, MD, Susan L. Mitchell, MD, and James J. Collins, PhD*

**CASE OF THE MONTH**

640 **Fisher Syndrome with Tetraparesis and Antibody to GQ1b: Evidence for Motor Nerve Terminal Block**
*Antonino Uncini, MD, and Alessandra Lugaresi, MD, PhD*

**REGULAR FEATURES**

645 **Letters to the Editor**
654 **Calendar of Events**
655 **AAEM News and Comments**

**JUNE 1999**

**EDITORIALS**

659 **Quantitative Sensation Testing in Epidemiological and Therapeutic Studies of Peripheral Neuropathy**
*Peter J. Dyck, MD, and Peter C. O'Brien, PhD*

663 **Causes of the Gulf War Syndrome: Testing Hypotheses**
*Marcello Lotti, MD*

**INVITED REVIEWS**

666 **What Does Chronic Electrical Stimulation Teach Us About Muscle Plasticity?**
*Dirk Pette, MD, and Gerta Vrbová, MD*

678 **Causalgia and Reflex Sympathetic Dystrophy: Does the Sympathetic Nervous System Contribute to the Generation of Pain?**
*Ralf Baron, MD, Jon D. Levine, MD, PhD, and Howard L. Fields, MD, PhD*

**MAIN ARTICLES**

696 **Effects of Exposure to Low-Dose Pyridostigmine on Neuromuscular Junctions In Vitro**
*Rosemarie Drake-Baumann, PhD, and Fredrick J. Seil, MD*

704 **Muscle Function in a Patient with Brody's Disease**
*Cornelis J. De Ruiter, PhD, Ron A. Wevers, PhD, Baziel G.M. Van Engelen, MD, Peter W.L. Verdijk, Ing, and Arnold De Haan, PhD*

712 **Polyneuropathy in Autosomal Dominant Cerebellar Ataxias: Phenotype–Genotype Correlation**
*Nathalie Kubis, MD, Alexandra Dürr, MD, Michel Gugenheim, MD, Hervé Chneiweiss, MD, PhD, Pilar Mazzetti, MD, Alexis Brice, MD, and Pierre Bouche, MD*

718 **New Near-Nerve Needle Nerve Conduction Technique: Differentiating Epicondylar from Cubital Tunnel Ulnar Neuropathy**
*Zeki Odabasi, MD, Shin J. Oh, MD, Gwen C. Claussen, MD, and Dae S. Kim, MD*

724 **Macrophages Enhance Muscle Satellite Cell Proliferation and Delay Their Differentiation**
*Franck Merly, PhD, Laurent Lescaudron, PhD, Thierry Rouaud, Felix Crossin, and Marie France Gardahaut, PhD*

733 **Motor Unit Action Potential Components and Physiologic Duration**
*Daniel Dumitru, MD, John C. King, MD, and William E. Rogers, MS*

742 **Skeletal Muscle and Small-Conductance Calcium-Activated Potassium Channels**
*David Pribnow, PhD, Teresa Johnson-Pais, PhD, Chris T. Bond, MS, John Keen, PhD, Robert A. Johnson, BS, Aaron Janowsky, PhD, Christopher Silvia, PhD, Mathew Thayer, PhD, James Maylie, PhD, and John P. Adelman, PhD*

751 **Stimulation of Peripheral Nerves Using a Novel Magnetic Coil**
*Ferdinand Binkofski, MD, Joseph Classen, MD, and Reiner Benecke, MD*

758 **Upper Limb Predominant, Multifocal Chronic Inflammatory Demyelinating Polyneuropathy**
*Kenneth C. Gorson, MD, Allan H. Ropper, MD, and David H. Weinberg, MD*

**SHORT REPORT**

766 **Cervical Root Stimulation at C5/6 Excites C8/T1 Roots and Minimizes Pneumothorax Risk**
*Howard W. Sander, MD, Daniel L. Menkes, MD, William J. Triggs, MD, and Sudhansu Chokroverty, MD*

**CASES OF THE MONTH**

769 **Focal, Steroid Responsive Myositis Causing Dropped Head Syndrome**
*Iftah Biran, MD, Oren Cohen, MD, Judith Diment, MD, Amos Peyser, MD, Roy Bahnof, BPT, and Israel Steiner, MD*

772 **Suprascapular Neuropathy Related to a Glenohumeral Joint Cyst**
*Leo McCluskey, MD, Daniel Feinberg, MD, and Carol Dolinskas, MD*

**REGULAR FEATURES**

778 **Letters to the Editor**
783 **Book Reviews**
786 **Books Received**
788 **Calendar of Events**
789 **AAEM News and Comments**

**JULY 1999**

**EDITORIAL**

797 **Excitability of Motor Axons in Neuromyotonia**
*David Burke, MD, DSc*

**INVITED REVIEW**

800 **Autoantibodies Associated with Peripheral Neuropathy**
*Richard H. Quarles, PhD, and Michael D. Weiss, MD*

**MAIN ARTICLES**

823 **Strength-Duration Properties of Peripheral Nerve in Acquired Neuromyotonia**
*Paul Maddison, MRCP, John Newsom-Davis, MD, FRCP, FRS, and Kerry R. Mills, PhD, FRCP*

831 **Knee Extensor Strength, Activation, and Size in Very Elderly People Following Strength Training**
*Stephen D.R. Harridge, PhD, Ann Kryger, MD, and Anders Stensgaard, MD*

840 **Axonal Involvement at the Common Entrapment Sites in Guillain-Barré Syndrome with IgG Anti-GM1 Antibody**
*Satoshi Kuwabara, MD, Masahiro Mori, MD, Kazue Ogawara, MD, Keiko Mizobuchi, MD, Takamichi Hattori, MD, Michiaki Koga, MD, and Nobuhiro Yuki, MD, PhD*

846 **Effects of Fetal Spinal Cord Tissue Transplants and Cycling Exercise on the Soleus Muscle in Spinalized Rats**
*John D. Houle, PhD, Kellie Morris, MD, Robert D. Skinner, PhD, Edgar Garcia-Rill, PhD, and Charlotte A. Peterson, PhD*

857 **Nonspecific Facilitation of Responses to Transcranial Magnetic Stimulation**
*Birgit Andersen, MD, Kai M. Rösler, MD, and Martin Lauritzen, MD, PhD*

864 **Nuclear Changes in a Case of X-Linked Emery-Dreifuss Muscular Dystrophy**
*A. Ognibene, MD, P. Sabatelli, S. Petrini, PhD, S. Squarzoni, MD, M. Riccio, BSc, S. Santi, BSc, M. Villanova, MD, S. Palmeri, MD, L. Merlini, MD, and N.M. Maraldi, PhD*

870 **Dissociated Small Hand Muscle Involvement in Amyotrophic Lateral Sclerosis Detected by Motor Unit Number Estimates**
*Satoshi Kuwabara, MD, Keiko Mizobuchi, MD, Kazue Ogawara, MD, and Takamichi Hattori, MD*

874 **Variable-Frequency Trains Offset Low-Frequency Fatigue in Human Skeletal Muscle**
*David W. Russ, MPT, and Stuart A. Binder-Macleod, PhD*

883 **Denervation Enhances Spontaneous Inflammatory Myopathy in SJL Mice**
*Margitta T. Kampman, MD, Sylvie Lafond Benestad, PhD, Tormod Fladby, MD, PhD, and Jan Mæhlen, MD, PhD*

889 **Transforming Growth Factor-β2 Is Elevated in Skeletal Muscle Disorders**
*Nobuyuki Murakami, MD, Ian S. McLennan, PhD, Ikuya Nonaka, MD, Kyoko Koishi, PhD, Christina Baker, and Graeme Hammond-Tooke, MB, BCh, PhD*

899 **Activity-Dependent Excitability Changes in Chronic Inflammatory Demyelinating Polyneuropathy: A Microneurographic Study**
*Satoshi Kuwabara, MD, Yoshio Nakajima, MD, Takamichi Hattori, MD, Shinobu Toma, MD, Keiko Mizobuchi, MD, and Kazue Ogawara, MD*

905 **Generation of Spectrin Breakdown Products in Peripheral Nerves by Addition of M-Calpain**
*Maria Susana Castejon, BS, Deborah G. Culver, MS, and Jonathan D. Glass, MD*

910 **Different Contribution of Joint and Cutaneous Inputs to Early Scalp Somatosensory Evoked Potentials**
*Domenico Restuccia, MD, Massimiliano Valeriani, MD, PhD, Carmen Barba, MD, Domenica Le Pera, MD, Pietro Tonali, MD, and François Mauguière, PhD*

920 **Altered Vasoreactivity to Angiotensin II in Experimental Diabetic Neuropathy: Role of Nitric Oxide**
*Mikihiro Kihara, MD, Manami K. Mitsui, MD, Yoshiyuki Mitsui, MD, Kazuto Okuda, MD, Yoshikuni Nakasaka, MD, Mitsuo Takahashi, MD, and James D. Schmelzer, BS*

926 **Central Motor Conduction Time in Patients with Multifocal Motor Conduction Block**
*J.L. Molineuvo, MD, A. Cruz-Martínez, MD, F. Graus, MD, J. Serra, MD, T. Ribalta, MD, and J. Valls-Solé, MD*

933 **Relationship Between Hypoxemia and Fibrillation Potential Firing Rate in Denervated Muscle**
*Shin-Ichi Izumi, MD, DMSc, Akio Tsubahara, MD, DMSc, and Naoichi Chino, MD, MS, DMSc*

**SHORT REPORTS**

937 **Amplitude-Dependent Slowing of Conduction in Amyotrophic Lateral Sclerosis and Polyneuropathy**
*Daniel M. Feinberg, MD, David C. Preston, MD, Jeremy M. Shefner, MD, PhD, and Eric L. Logigian, MD*

941 **Molecular Analysis in Spanish Patients with Muscle Carnitine Palmitoyltransferase Deficiency**
*Miguel A. Martín, Pharm B, Juan C. Rubio, MSc, Fernando De Bustos, MSc, Pilar Del Hoyo, Pharm B, Yolanda Campos, MSc, Alberto García, MSc, Belén Börnstein, MD, Ana Cabello, MD, and Joaquín Arenas, PhD*

944 **Lateral Antebrachial Cutaneous Neuropathy in a Windsurfer**
*Charles K. Jablecki, MD*

946 **Muscle Vibration: Different Effects on Transcranial Magnetic and Electrical Stimulation**
*Andon Kossev, PhD, DSc, Sabine Siggelkow, MD, Margot Schubert, MD, Kai Wohlfarth, MD, and Reinhard Dengler, MD*

949 **Biochemical and Molecular Correlations in Carnitine Palmitoyltransferase II Deficiency**
*Georgirene D. Vladutiu, PhD*

**CASES OF THE MONTH**

952 **Paraneoplastic Painful Ulnar Neuropathy**
*Mohammad K. Sharief, MD, PhD, MRCP, Susan F.D. Robinson, MRCPath, David A. Ingram, MD, Jenian F. Geddes, FRCPath, and Michael Swash, MD, FRCPath*

956 **Focal Myositis Presenting with Radial Nerve Palsy**
*Bassam I. Alzagatiti, MD, Tulio E. Bertorini, MD, Linda H. Horner, Virginia S. Maccarino, and Thomas O'Brien, MD*

**ISSUES & OPINIONS**

960 **Disputed Radial Tunnel Syndrome**
*Richard Rosenbaum, MD*

**REGULAR FEATURES**

968 **Letters to the Editor**

972 **Book Reviews**

974 **Calendar of Events**

975 **AAEM News and Comments**

AUGUST 1999


**INVITED REVIEWS**

983 **Neurotrophic Factors and Neuromuscular Disease: I. General Comments, the Neurotrophin Family, and Neuropoietic Cytokines**
*Hiroshi Mitsumoto, MD, DMedSc, and Kazufumi Tsuzaka, MD*

1000 **Neurotrophic Factors and Neuromuscular Disease: II. GDNF, Other Neurotrophic Factors, and Future Directions**
*Hiroshi Mitsumoto, MD, DMedSc, and Kazufumi Tsuzaka, MD*

**MAIN ARTICLES**

1022 **Age-Related Changes in Fastest and Slowest Conducting Axons of Thenar Motor Units**
*François-Charles Wang, MD, Victor De Pasqua, and Paul J. Delwaide, MD, PhD*

1030 **Anti-MAG IgM Penetration into Myelinated Fibers Correlates with the Extent of Myelin Widening**
*Marie-Françoise Ritz, PhD, Beat Erne, MSc, Fabrizia Ferracin, MSc, Anne Vital, MD, Claude Vital, MD, and Andreas J. Steck, MD*

1038 **Superimposed Single Impulse and Pulse Train Electrical Stimulation: A Quantitative Assessment during Submaximal Isometric Knee Extension in Young, Healthy Men**
*Michael Miller, MSc, David Downham, PhD, and Jan Lexell, MD, PhD*

1047 **In Vivo Microdialysis—A Technique for Analysis of Chemical Activators of Muscle Pain**
*Anne McArdle, PhD, Goldie Khera, BSc, Richard H.T. Edwards, PhD, FRCP, and Malcom J. Jackson, PhD, DSc, FRCPath*

1053 **Comparison of Motor Conduction Abnormalities in Lumbosacral Radiculopathy and Axonal Polyneuropathy**
*Alan R. Berger, MD, Khema Sharma, MD, and Richard B. Lipton, MD*

1058 **Tracheostomy in Guillain-Barré Syndrome**
*Nicholas D. Lawn, MB, ChB, FRACP, and Eelco F.M. Wijdicks, MD*

1063 **Multielectrode Surface EMG for Noninvasive Estimation of Motor Unit Size**
*Tzyh-Yi Sun, PhD, Thy-Sheng Lin, MD, and Jia-Jin Chen, PhD*

1071 **Anti-GQ1b IgG Antibody Is Associated with Ataxia as Well as Ophthalmoplegia**
*Susumu Kusunoki, MD, Atsuro Chiba, MD, and Ichiro Kanazawa, MD*

1075 **Clinical Utility of Reflex Studies in Assessing Cervical Radiculopathy**
*Thomas A. Miller, MD, FRCP(C), Richard Pardo, MSc, and Ray Yaworski*

1080 **Caveolin-3 and Sarcoglycans in the Vacuolar Myopathies and Centronuclear Myopathy**
*Masaru Inose, MD, Itsuro Higuchi, MD, Masanori Nakagawa, MD, Nobuyuki Kashio, MD, and Mitsuhiro Osame, MD*

1087 **Changes in the Compound Action Current Amplitudes in Relation to the Conduction Velocity and Functional Recovery in the Reconstructed Peripheral Nerve**
*Paul D.L. Kuypers, MD, PhD, Erik T. Walbeehm, MD, Michiel Dudok V Heel, MSc, Moshe Godschalk, MSc, PhD, and Steven E.R. Hovius, MD, PhD*

1094 **Quadriceps Muscle Strength, Contractile Properties, and Motor Unit Firing Rates in Young and Old Men**
*Martin R. Roos, MSc, Charles L. Rice, PhD, Denise M. Connelly, PhD, and Anthony A. Vandervoort, PhD*

**SPECIAL ARTICLE**

1104 **Practice Parameter: The Care of the Patient with Amyotrophic Lateral Sclerosis (An Evidence-Based Review)**
*R.G. Miller, MD, J.A. Rosenberg, MD, D.F. Gelinas, MD, H. Mitsumoto, MD, D. Newman, MD, R. Sufit, MD, G.D. Borasio, MD, W.G. Bradley, DM, FRCP, M.B. Bromberg, MD, PhD, B.R. Brooks, MD, E.J. Kasarskis, MD, PhD, T.L. Munsat, MD, E.A. Oppenheimer, MD, and The ALS Practice Parameters Task Force*

**SHORT REPORTS**

1119 **Influence of Handling Procedures on Rat Plasma Creatine Kinase Activity**
*Mohammed Yerroum, MSc, François Braconnier, MD, and Patrick Chariot, MD*

1122 **Desmin Phosphorylation Abnormalities in Cytoplasmic Body and Desmin-Related Myopathies**
*Anne Caron, PhD, and Françoise Chapon, MD*

1126 **Muscle Fiber Conduction Velocity at Different States of Isotonic Contraction**
*Sascha Mitrovic, MD, Günter Lüder, and Hanns Christian Hopf, MD*

1129 **Postoperative Lateral Femoral Cutaneous Neuropathy**
*Charles K. Jablecki, MD*

1132 **Proximal Martin–Gruber Anastomosis Mimicking Ulnar Neuropathy at the Elbow**
*Connie Marras, MD, and Gyl Midroni, MD, FRCP(C)*

1136 **A New Mutation in the Regulatory Domain of the Myophosphorylase Gene Affecting Protein Dimer Contact**
*Josep Gamez, MD, Roberto Fernandez, MS, Claudio Bruno, MD, Antonio L. Andreu, MD, Carlos Cervera, MD, Carmen Navarro, MD, Simon Schwartz, MD, PhD, and Salvatore DiMauro, MD*

**CASES OF THE MONTH**

1139 **Asymmetrical Polyneuropathy with a Stepwise Progressive Course and Well-Demarcated Areas of Demyelination**
*Anne Vital, MD, PhD, Michel Barat, MD, Alain Lagueny, MD, Philippe Latour, MD, and Claude Vital, MD*

1146 **Adult-Onset Nemaline Myopathy: Another Cause of Dropped Head**
*Catherine Lomen-Hoerth, MD, PhD, Martha L. Simmons, MD, PhD, Stephen J. DeArmond, MD, PhD, and Robert B. Layzer, MD*

**ISSUES & OPINIONS**

1151 **Intraoperative Monitoring Reduces Complications and Is Therefore Useful**
*Jasper R. Daube, MD*

1154 **Intraoperative Monitoring Is of Limited Use in Routine Practice**
*David A. Gelber, MD*

**REGULAR FEATURES**

1157 **Letters to the Editor**

1162 **Calendar of Events**

1163 **AAEM News and Comments**

**SEPTEMBER 1999**

**EDITORIAL**

1165 **Carpal Tunnel Syndrome and the Myth of El Dorado**
*Richard Rosenbaum, MD*

**INVITED REVIEWS**

1168 **Isolated Cranial Nerve Palsies Due to Brainstem Lesions**
*Frank Thömke, MD*

1177 **Sodium Channels, Excitability of Primary Sensory Neurons, and the Molecular Basis of Pain**
*Stephen G. Waxman, MD, PhD, Theodore R. Cummins, PhD, Sulayman Dib-Hajj, PhD, Jenny Fjell, and Joel A. Black, PhD*

**MAIN ARTICLES**

1188 **Motor Unit Action Potential Duration and Muscle Length**
*Daniel Dumitru, MD, PhD, and John C. King, MD*

1196 **Correlation between Two-Point Discrimination and Median Nerve Sensory Response**
*Evan S. Marlowe, MD, Francis J. Bonner, Jr., MD, and Allen R. Berkowitz, MD*

1201 **Facial Nerve Dysfunction in Hereditary Motor and Sensory Neuropathy Type I and III**
*Franz X. Glocker, MD, Kai M. Rösler, MD, Dieter Linden, MD, Florian Heinen, MD, Christian W. Hess, MD, and Carl H. Lücking, MD*

1209 **Reorganization of Flexion Reflexes in the Upper Extremity of Hemiparetic Subjects**
*Julius P.A. Dewald, PhD, Randall F. Beer, PhD, Joseph D. Given, PhD, John R. McGuire, MD, and W. Zev Rymer, MD, PhD*

1222 **Ocular Myasthenia Gravis: Predictive Value of Single-Fiber Electromyography**
*David H. Weinberg, MD, Joseph F. Rizzo, III, MD, Michael T. Hayes, MD, Michael D. Kneeland, MD, MPH, and John J. Kelly, Jr., MD*

1228 **Direct Measurement of High-Energy Phosphate Compounds in Patients with Neuromuscular Disease**
*M.A. Tarnopolsky, MD, PhD, and G. Parise, BSc*

1234 **Lateral Plantar Neuropathy**
*Shin J. Oh, MD, Ki H. Kwon, MD, Jung S. Hah, MD, Doo E. Kim, MD, and Mehmet Demirci, MD*

1239 **Short-Term Aerobic Training Response in Chronic Myopathies**
*T. Taivassalo, BSc, N. De Stefano, MD, J. Chen, BSc, G. Karpati, MD, D.L. Arnold, MD, and Z. Argov, MD*

1244 **A Comparison of Two Commercial Quantitative Electromyographic Algorithms with Manual Analysis**
*Mark B. Bromberg, MD, PhD, A. Gordon Smith, MD, and Jay Bauerle, MD*

1249 **Contractile Properties of the Quadriceps Muscle in Individuals with Spinal Cord Injury**
*H.L. Gerrits, MSc, A. De Haan, PhD, M.T.E. Hopman, PhD, MD, L.H.V. Van Der Woude, PhD, D.A. Jones, PhD, and A.J. Sargeant, PhD*

1257 **Quantitative Sudomotor Axon Reflex Test (Qsart): A New Approach for Testing Distal Sites**
*A. Riedel, MD, S. Braune, MD, G. Kerum, MD, J. Schulte-Mönting, PhD, and C.H. Lücking, MD*

1265 **Comparison of Maximal Voluntary Isometric Contraction and Drachman's Hand-Held Dynamometry in Evaluating Patients with Amyotrophic Lateral Sclerosis**
*Marcus Beck, MD, Ralf Giess, MD, Werner Würffel, MD, Tim Magnus, MD, Günter Ochs, MD, and Klaus V. Toyka, MD*

**SHORT REPORTS**

1271 **Elongation of (CTG)n Repeats in Myotonic Dystrophy Protein Kinase Gene in Tumors Associated with Myotonic Dystrophy Patients**
*Kenji Jinnai, MD, Toshiko Sugio, MD, Maki Mitani, MD, Kozo Hashimoto, PhD, and Keiichi Takahashi, MD*

1275 **Sample Size and the Study of F Waves**
*João Antonio Maciel Nobrega, MD, PhD, Gilberto Mastrocola Manzano, MD, PhD, Neil Ferreira Novo, PhD, and Patricia Teófilo Monteagudo, MD, MSc*

1279 **Facial Palsy in Heerfordt's Syndrome: Electrophysiological Localization of the Lesion**
*F.X. Glocker, MD, C. Seifert, MD, and C.H. Lücking, MD*

1283 **Sympathetic Skin Responses in Hereditary Sensory and Autonomic Neuropathy and Familial Amyloid Neuropathy Are Different**
*Zaitoon M. Shivji and Peter Ashby, MD, FRCP(C)*

**CASES OF THE MONTH**

1287 **Cervical Root Stimulation in a Case of Classic Neurogenic Thoracic Outlet Syndrome**
*Kevin J. Felice, DO, Kimberly B. Butler, and William H. Druckemiller, MD*

1293 **Neuromuscular Transmission Defect Caused by Carbamazepine**
*Osama O. Zaidat, MD, Henry J. Kaminski, MD, Frank Berenson, MD, and Bashar Katirji, MD*

**REGULAR FEATURES**

1297 **Letters to the Editor**

1301 **Book Reviews**

1303 **Calendar of Events**

1304 **AAEM Abstracts of Presentations**

**OCTOBER 1999**

**EDITORIAL**

1337 **Neurophilins and the Nervous System**
*Daniel D. Mikol, MD, PhD, and Eva L. Feldman, MD, PhD*

**INVITED REVIEWS**

1341 **Neuromuscular Disease and Calcium Channels**
*David A. Greenberg, MD, PhD*

1350 **Myonuclear Domains in Muscle Adaptation and Disease**
*David L. Allen, PhD, Roland R. Roy, PhD, and V. Reggie Edgerton, PhD*

**MAIN ARTICLES**

1361 **"Pseudo-Conduction Block" in Vasculitic Neuropathy**
*Leo McCluskey, MD, Daniel Feinberg, MD, Charles Cantor, MD, and Shawn Bird, MD*

1367 **Quantitative Magnetic Resonance Imaging of the mdx Mouse Model of Duchenne Muscular Dystrophy**
*Jeff F. Dunn, PhD, and Youssef Zaim-Wadghiri, PhD*

1372 **Reliability of Nerve Conduction Studies among Active Workers**
*Deborah F. Salerno, PhD, Robert A. Werner, MD, James W. Albers, MD, PhD, Mark P. Becker, PhD, Thomas J. Armstrong, PhD, and Alfred Franzblau, MD*

1380 **Effect of Time of Day on Force Variation in a Human Muscle**
*Alain Martin, PhD, Alain Carpentier, PhD, Nathalie Guissard, PhD, Jacques Van Hoecke, PhD, and Jacques Duchateau, PhD*

1388 **Neurophysiological Assessment in the Diagnosis of Botulism: Usefulness of Single-Fiber EMG**
*Luca Padua, MD, PhD, Irene Aprile, MD, Mauro Lo Monaco, MD, Lucia Fenicia, MD, Fabrizio Anniballi, MD, Flavia Pauri, MD, and Pietro Tonali, MD*

1393 **Evolution and Resolution of Stimulation-Induced Axonal Injury in Peripheral Nerve**
*William F. Agnew, PhD, Douglas B. McCreery, PhD, Ted G.H. Yuen, PhD, and Leo A. Bullara, BA*

1403 **Nerve Conduction Impairment in Experimental Diabetes—Proximodistal Gradient of Severity**
*Jyoti Patel, BSc, and David R. Tomlinson, DSc*

1412 **Cervical Radiculopathies: Relationship between Symptom Duration and Spontaneous EMG Activity**
*Liliana E. Pezzin, PhD, Timothy R. Dillingham, MD, MS, Tamara D. Lauder, MD, Michael Andary, MD, Shashi Kumar, MD, Ronald R. Stephens, MD, and Steven Shannon, MD*

1419 **Motor Evoked Potentials of the First Dorsal Interosseous Muscle in Step and Ramp Index Finger Abduction**
*Tatsuya Kasai, PhD, and Susumu Yahagi*

1426 **Clinicopathological Study of an Autopsy Case with Sensory-Dominant Polyradiculoneuropathy with Antiganglioside Antibodies**
*Tomokazu Obi, MD, Toshikazu Murakami, MD, Masami Takatsu, MD, Susumu Kusunoki, MD, Masahiro Serizawa, MD, Kouichi Mizoguchi, MD, Reiko Koike, CT, and Yoshiro Nishimura, MD*

1432 **Fatigue-Associated Changes in the Electromyogram of the Human First Dorsal Interosseous Muscle**
*Inge Zijdewind, PhD, Machiel J. Zwarts, PhD, MD, and Daniel Kernell, PhD*

1437 **Inheritance of a 38-kb Fragment in Apparently Sporadic Facioscapulohumeral Muscular Dystrophy**
*Francesca Vitelli, BS, Marcello Villanova, MD, PhD, Alessandro Malandrini, MD, Mirella Bruttini, BS, Monica Piccini, BS, Luciano Merlini, MD, Giancarlo Guazzi, MD, and Alessandra Renieri, MD, PhD*

1442 **Demyelinating X-Linked Charcot–Marie–Tooth Disease: Unusual Electrophysiological Findings**
*F. Tabaraud, MD, E. Lagrange, MD, P. Sindou, PhD, A. Vandenberghe, PhD, N. Levy, MD, PhD, and J.M. Vallat, MD*

1448 **Symptoms of 100 Patients with Electromyographically Verified Carpal Tunnel Syndrome**
*J. Clarke Stevens, MD, Benn E. Smith, MD, Amy L. Weaver, MS, E. Peter Bosch, MD, H. Gordon Deen, Jr., MD, and James A. Wilkens, MD*

| | | |
|---|---|---|
| **SHORT REPORT** | 1457 | **Reducing Intersubject Variability in Motor Unit Number Estimation**<br>*Jeremy M. Shefner, MD, PhD, Devanand Jillapalli, MD, and Deborah Y. Bradshaw, MD* |
| **CASE OF THE MONTH** | 1461 | **Sensorimotor Polyneuropathy Associated with Chronic Lymphocytic Leukemia, IgM Antigangliosides Antibody and Human T-Cell Leukemia Virus I Infection**<br>*Yoshiyuki Mitsui, MD, Susumu Kusunoki, MD, Shingo Hiruma, PhD, Maiko Akamatsu, MD, Mikihiro Kihara, MD, Shigeo Hashimoto, MD, and Mitsuo Takahashi, MD* |
| **REGULAR FEATURES** | 1466 | **Letter to the Editor** |
| | 1468 | **Book Reviews** |
| | 1471 | **Calendar of Events** |
| | 1472 | **AAEM News and Comments** |

**NOVEMBER 1999**

| | | |
|---|---|---|
| **OBITUARY** | 1475 | **Herbert Henri Jasper**<br>*Andrew A. Eisen, MD, FRCP(C)* |
| **EDITORIAL** | 1476 | **Bell's Palsy and HSV-1 Infection**<br>*Christina M. Marra, MD* |
| **INVITED REVIEWS** | 1479 | **Intravenous Immunoglobulin in the Treatment of Autoimmune Neuromuscular Diseases: Present Status and Practical Therapeutic Guidelines**<br>*Marinos C. Dalakas, MD* |
| | 1498 | **Charcot-Marie-Tooth Disease and Related Neuropathies: Molecular Basis for Distinction and Diagnosis**<br>*Davide Pareyson, MD* |
| **MAIN ARTICLES** | 1510 | **Effect of Movement on Dipolar Source Activities of Somatosensory Evoked Potentials**<br>*Massimiliano Valeriani, MD, PhD, Domenico Restuccia, MD, Vincenzo Di Lazzaro, MD, Domenica Le Pera, MD, and Pietro Tonali, MD* |
| | 1520 | **Modular Organization of Human Leg Withdrawal Reflexes Elicited by Electrical Stimulation of the Foot Sole**<br>*Ole K. Andersen, PhD, Finn A. Sonnenborg, MSc, and Lars Arendt-Nielsen, PhD, Dr Med* |
| | 1531 | **Current Perception Threshold Testing in Fabry's Disease**<br>*Long-Sun Ro, MD, PhD, Sien-Tsong Chen, MD, Lok-Ming Tang, MD, Wen-Chuin Hsu, MD, Hong-Shiu Chang, MD, and Chin-Chang Huang, MD* |
| | 1538 | **Intraoperative Electrical Stimulation for Identification of Cranial Nerve Nuclei**<br>*Steven D. Chang, MD, Jaime R. López, MD, and Gary K. Steinberg, MD, PhD* |
| | 1544 | **Modulation of Motor Evoked Potentials by Muscle Vibration: The Role of Vibration Frequency**<br>*Sabine Siggelkow, MD, Andon Kossev, PhD, DSc, Margot Schubert, MD, Hans-Hermann Kappels, Werner Wolf, PhD, and Reinhard Dengler, MD* |
| | 1549 | **Cardiomyopathy in Duchenne, Becker, and Sarcoglycanopathies: A Role for Coronary Dysfunction?**<br>*Tomaso Gnecchi-Ruscone, MD, Jackie Taylor, MD, Eugenio Mercuri, MD, Giovanni Paternostro, MD, Robert Pogue, PhD, Kate Bushby, MD, Caroline Sewry, PhD, Francesco Muntoni, MD, FRCPCH, and Paolo G. Camici, MD, FRCP* |
| | 1557 | **Changes of Forearm EMG and Cerebral Evoked Potentials Following Sudden Muscle Stretch in Patients with Huntington's Disease**<br>*Ralf Siedenberg, MD, Douglas S. Goodin, MD, and Michael J. Aminoff, MD, FRCP* |
| | 1564 | **The Effect of Differential and Complete Nerve Block on Experimental Muscle Pain in Humans**<br>*René J. Laursen, MD, Thomas Graven-Nielsen, MSc, PhD, Troels S. Jensen, MD, PhD, and Lars Arendt-Nielsen, MSc, PhD* |

1571 **Motor Unit Number Estimate-Based Rates of Progression of ALS Predict Patient Survival**
*Carmel Armon, MD, MHS, and Murray E. Brandstater, MD, BS, PhD*

1576 **Leukemia Inhibitory Factor, Glial Cell Line-Derived Neurotrophic Factor, and Their Receptor Expressions Following Muscle Crush Injury**
*Katsuya Kami, PhD, Yoshihiro Morikawa, MD, PhD, Yoshinori Kawai, PhD, and Emiko Senba, MD, PhD*

**SHORT REPORTS**

1587 **A Relief Maneuver in Carpal Tunnel Syndrome**
*Gabriele Manente, MD, Filomena Torrieri, MD, Filippo Pineto, MD, and Antonino Uncini, MD*

1590 **The Silent Period after Magnetic Brain Stimulation in Generalized Tetanus**
*Jason D. Warren, BMedSc, MB, BS, Thomas E. Kimber, MB, BS, FRACP, and Philip D. Thompson, PhD, FRACP*

1593 **Atypical Phenotype of Charcot–Marie–Tooth Disease Type 1A**
*Tatsufumi Murakami, MD, Hiroyuki Oomori, MD, Akio Hara, MD, Eiichiro Uyama, MD, Shuji Mita, MD, and Makoto Uchino, MD*

1597 **Bilateral Medial Pectoral Neuropathy in a Weight Lifter**
*Fabian Rossi, MD, William J. Triggs, MD, Ralph Gonzalez, MD, and Stuart J. Shafer, MD*

1600 **Myasthenia Gravis, Thymoma, Intestinal Pseudo-Obstruction, and Neuronal Nicotinic Acetylcholine Receptor Antibody**
*Ravi Pande, MD, and A. Arturo Leis, MD*

**CASES OF THE MONTH**

1603 **Complex Repetitive Discharges: Cause or Effect of Neurogenic Muscle Hypertrophy?**
*Julie Rowin, MD, and Matthew N. Meriggioli, MD*

1607 **Subacute Sensory Neuropathy Associated with Epstein–Barr Virus**
*Devon I. Rubin, MD, and Jasper R. Daube, MD*

**REGULAR FEATURES**

1611 **Calendar of Events**

1612 **AAEM News and Comments**


DECEMBER 1999


**EDITORIAL**

1617 **Indications and Value of Nerve Biopsy**
*Gérard Said, MD*

**INVITED REVIEWS**

1620 **Spinal Cord Monitoring**
*Marc R. Nuwer, MD, PhD*

1631 **Muscle Disorders Associated with Cyclosporine Treatment**
*Myriam Breil, PharmD, and Patrick Chariot, MD*

**MAIN ARTICLES**

1637 **Neuromuscular Transmission Failure Due to Common Krait (*Bungarus caeruleus*) Envenomation**
*Gagandeep Singh, MD, DM, H.S. Pannu, MD, P.S. Chawla, MD, and S. Malhotra, MD*

1644 **Cold Nerve Injury Is Enhanced by Intermittent Cooling**
*Jianping Jia, MD, and Martin Pollock, MD*

1653 **Electrodiagnostic Findings in Syringomyelia**
*Martín A. Nogués, MD, and Erik Stålberg, MD*

1660 **Increased Quantal Release of Acetylcholine at the Neuromuscular Junction Following Scald Injury in the Rat**
*Jonathan P. Edwards, PhD, Paul A. Hatton, PhD, Roderick A. Little, PhD, Richard A. Pennington, BSc, and Anthony C. Wareham, PhD*

1667 **A Comparison of Electrophysiological Tests for the Early Diagnosis of Diabetic Neuropathy**
*Carlos Pastore, MD, PhD, Virginia Izura, MD, Emilio Geijo-Barrientos, MD, PhD, and Jose-Ramon Dominguez, MD*

1674 **Adenosine Inhibits Depolarization-Induced $Ca^{2+}$ Release in Mammalian Skeletal Muscle**
*Ronnie Blazev, BSc, and Graham D. Lamb, PhD*

1684 **Cortical Muscle Representation in Amyotrophic Lateral Sclerosis Patients: Changes with Disease Evolution**
*Mamede de Carvalho, MD, Pedro Cavaleiro Miranda, PhD, Maria Lourdes Sales Luís, PhD, Eduardo Ducla-Soares, PhD*

1693 **Distinguishing Clinical and Electrodiagnostic Features of X-Linked Bulbospinal Neuronopathy**
*Matthew N. Meriggioli, MD, Julie Rowin, MD, and Donald B. Sanders, MD*

1698 **Stimulation Single-Fiber EMG in Infant Botulism**
*Vinay Chaudhry, MD, FRCP, and Thomas O. Crawford, MD*

1704 **The Action Mechanism of Cyclooxygenase-2 Inhibitor for Treatment of Experimental Allergic Neuritis**
*Katsuichi Miyamoto, MD, Nobuyuki Oka, MD, Teruaki Kawasaki, MD, Hitoshi Satoi, MD, Akinori Matsuo, MD, and Ichiro Akiguchi, MD*

**SHORT REPORTS**

1710 **Postexercise Facilitation of Motor Evoked Potentials Elicited by Ipsilateral Voluntary Contraction**
*Joaquim P. Brasil-Neto, MD, PhD, Valéria P. Araújo, and Cláudio R. Carneiro*

1713 **Expression of Thrombomodulin, Caveolin-3, and Desmin on Muscle Fibers in Neuromuscular Diseases**
*Takahito Niiyama, MD, Itsuro Higuchi, MD, Ikuro Maruyama, MD, and Mitsuhiro Osame, MD*

1717 **Iliac Artery Aneurysm Causing Isolated Superior Gluteal Nerve Lesion**
*Wolfgang Grisold, MD, Franz Karnel, MD, Wolfgang Kumpan, MD, Peter Hitzenberger, MD and Udo Zifko, MD*

1721 **Brachial Plexopathy Caused by Subclavian Artery Aneurysm in Behçet's Disease**
*Kyung Y. Lee, MD, Il N. Sunwoo, MD, Won S. Oh, MD, Seung M. Kim, MD, and Byung O. Choi, MD*

1724 **Neurophysiological and Ultrasound Findings in Sural Nerve Lesions Following Stripping of the Small Saphenous Vein**
*Stefano Simonetti, MD, Stefano Bianchi, MD, and Carlo Martinoli, MD*

**CASES OF THE MONTH**

1727 **Lambert-Eaton Myasthenic Syndrome with Ophthalmoparesis and Pseudoblepharospasm**
*Naomi Kanzato, MD, Masakatsu Motomura, MD, Masahito Suehara, MD, and Kimiyosi Arimura, MD*

1731 **High Expression of MHC I in the Tibialis Anterior Muscle of a Paraplegic Patient**
*Andreas Hartkopp, MD, PhD, Jesper L. Andersen, PhD, Stephen D.R. Harridge, PhD, Clarissa Crone, MD, PhD, Tom Gruschy-Knudsen, MSc, Michael Kjær, MD, PhD, Mizuno Masao, PhD, Aivaras Ratkevicius, PhD, Bjørn Quistorff, MD, PhD, Shi Zhou, PhD, and Fin Biering-Sørensen, MD, PhD*

**REGULAR FEATURES**

1738 **Letters to the Editor**
1741 **Calendar of Events**
1742 **AAEM News and Comments**
1751 **Volume 22 Author Index**
1763 **Volume 22 Subject Index**
I **Volume 22 Contents**